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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,937	01/11/2006	Hongtu Zhao	006005-046	8690
21839 7590 05/16/2007 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER SAWHNEY, HARGOBIND S	
			ART UNIT 2885	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,937

Applicant(s)

ZHAO ET AL.

Examiner

Hargobind S. Sawhney

Art Unit

2885

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/11/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. The preliminary amendment filed on June 29, 2005 has been entered.

Accordingly: the specification, including the abstract, has been amended; and claims 1-14 have been amended.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following claimed features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Figures included in the disclosure require through review and corrections, as they do not provide or reflect the claimed features including the following:

Claim 1, lines 7 and 8, "said light emitting surface Forming an angle of $\pm 0-85^{\circ}$ with respect to the axis of said reflector";

Claim 2, lines 3 and 4, " a plurality of reflective mirrors focal point of each reflective mirror";

Claim 3, line 2, " the axes of the reflective mirrors ... parallel to the axis of the reflector;

Claim 6, lines 2 and 3, "said light emitting surface forms an angle of $\pm 0-30^{\circ}$ with respect to the axis of the reflector; and

Claim 7, lines 6 and 7, a first conductive layer insulated from a second conductive layer.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the features including the following as described in the specification.

Claim 1, lines 7 and 8, "said light emitting surface Forming an angle of $\pm 0-85^{\circ}$ with respect to the axis of said reflector";

Claim 2, lines 3 and 4, " a plurality of reflective mirrors Focal point of each reflective mirror";

Claim 3, line 2, " the axes of the reflective mirrors ... parallel to the axis of the reflector;

Claim 6, lines 2 and 3, "said light emitting surface forms an angle of $\pm 0-30^0$ with respect to the axis of the reflector;

Figure 1 needs to be labeled as PRIOR ART,

All figures need thorough review and amendment in light of all claims.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1-14 are objected to because of the following informalities:

Claim 1, line 2, "light emitting diode chip (s)" needs to be rephrased as -- at least one light emitting diode chip --. Similar deficiencies also exist in claim 9

Claim 1, line 3, " the light emitting diode chips" needs to be rephrased as -- the at least one light emitting diode chip--.

Claim 1, line 7, " $\pm 85^0$ " needs additional explanation. Similar deficiency also exists in each of claims 6, 9 and 12.

Claim 13, lines 1 and 2 are typed twice. Delete the first couple of lines.

Claim 9, line 1, " a method of manufacturing" is misleading. It should be rephrased as --method steps for assembling --. Similar rephrasing is needed in each of lines 3 and 4 of claim 9.

Claims 2- 8 are necessarily objected because of their dependency on the objected base claim 1.

Claims 10-14 are necessarily objected because of their dependency on the objected base claim 9.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by US

Patent No.: 7,048,412 B2 (Martin. et al.).

Regarding claims 1-7, Martin et al. discloses a light emitting diode – LED- lamp 1000 (Figures 10A and 10B) comprising:

- LED chips 1010-1 through 1010-4 mounted on a lampwick 1006, and having their light emitting surfaces facing the curved reflection surface of a paraboloidal reflector 1012 (Figure 10A and 10B, column 7, lines 39-46);
- The at least one of the LED chips 1010-1 through 1010-4 positioned at the focal point of the reflection surface of the reflector 1012 (Figures 10A and 10B, column 7, lines 46-51); the light emitting surface of the at least one LED forming an angle $\pm 0 - 85^{\circ}$ with respect to the axis of the reflector 1012 – even a minimum axial length of an LED chip would form more than 0° angle- (Figures 10A and 10B); the reflector including four reflective mirrors 1014-1 through 1014-4, each receiving the at least one of the LED chip(s) 1010-1 through 1010-4 at its respective focal point (Figure 10A and 10B, column 7, lines 46-51); the axes of the reflective mirrors 1014-1 through 1014-4 being parallel to the axis of the reflector 1012 - as the LEDs are mounted on a lampwick which is coaxial with the reflector, and the LEDs being located on the focal points of the reflective mirrors- (Figure 10A and 10B); the light

emitting surface of each of the LED chips 1010-1 through 1010-4 forming an angle of $\pm 0-30^0$ – being not exactly point-light source – (Figure 10B); the lampwick 1006 including a rectangular base – the LED mounting surface(s) bearing the LED chip 9(s) 1010-1 through 1010-4, the lampwick base including a conductive layer operationally required to be electrically insulated to isolate individual LEDs 1010-2 04 1010-3 – the LED circuit board- from each other, and from thermally –conductive layers 1016s (Figure 10C, column 4, lines 20-25).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over by US Patent No.: 7,048,412 B2 (Martin. et al.) in view of the prior art admitted by the applicant.(Prior art).

Regarding claim 8, Martin et al. discloses the light emitting diode – LED- lamp as applied to section 6 above. However, Martin et al. does not specifically teach the above-indicated lamp being encapsulated with resin. However, Martin et al. identifies an LED lamp (Figure 1) encapsulated with resin 104 taught by the prior art (Instant application, Figure 1, Specification, Page 1, last three lines).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the LED lamp of Martin et al. by providing encapsulation as taught by the prior art admitted by the applicant for the benefits of efficient light flux distribution, and protection of the sensitive internals of the device.

Regarding method claims 9-14, Martin et al. discloses the light emitting diode – LED- lamp as applied to apparatus claims 1-5 and 8 discussed above, and in section 6 above. The LED lamp includes a reflector 1012, a lampwick 1006, a plurality of LED chips 1010-1 through 1010-4, and an encapsulation.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to meet the method limitations by directly applying the teaching of Martin et al. applied to claims 1-6 and 8.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Smith et al. (US Patent No.: 6,851,835 B2), English et al. (US Patent No.: 6,682,211 B2), Lin (US Patent No.: 6,652,122 B2), Martineau (US Patent No.: 6,644,841 B2), Hung (US Patent Application Pub. No.: US 2003/0103348 A1), English et al. Hung (US Patent Application Pub. No.: US 2003/0063476 A1), Alessio (US Patent No.: 6,454,433 B1), Gampe et al. (US Patent No.: 6,080,464), Smith (US Patent No.: 4,964,025) and Schellhorn et al. (US Patent No.: 4,907,044), Biard (US Patent No.: 3,821,775)

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S. Sawhney whose telephone number is 571 272 2380. The examiner can normally be reached on 8:00 AM - 4:30 PM 30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk Lee can be reached on 571 272 2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HSS
5/10/07


Examiner: Hargobind S. Sawhney